

## IN THE CLAIMS

1. (Currently Amended)      A method for detecting abnormal traffic at a network level using a statistical analysis, the method comprising the steps of:

- a) gathering local traffic data from each network device and integrating a plurality of the local traffic data to generate traffic data in the network level by a single traffic sensing module;
- b) extracting a characteristic traffic data based on the traffic data in the network level;
- c) comparing the characteristic traffic data with a predetermined characteristic traffic data profile resulting from statistical computations and representing normal traffic, and determining whether there is abnormal traffic in the network;
- d) updating the predetermined characteristic traffic data profile using the characteristic traffic data if there is no abnormal traffic in the network, and analyzing a volume amount of the abnormal traffic and monitoring the abnormal traffic if there is abnormal traffic in the network; and
- e) transmitting the analysis result of the seriousness-volume amount of the abnormal traffic to an abnormal traffic processing system to detect abnormal traffic without operation of a network manager, and processing the abnormal traffic to prevent a network failure.

2. (Original)      The method as recited in claim 1, wherein the characteristic traffic data includes:

- information on traffic assigned to an application port which is selected according to an application service;
- information on traffic of which packet size is identical; and
- information on traffic of which the number of source-destination pairs, which represents the number of source addresses of the traffic having the same target address.

3. (Cancelled)

4. (Currently Amended) A computer-readable recording medium for storing a program that implements a method for detecting abnormal traffic at a network level using a statistical analysis, the method comprising the steps of:

a) gathering local traffic data from each network device and integrating a plurality of the local traffic data to generate traffic data in the network level by a single traffic sensing module;

b) extracting a characteristic traffic data based on the traffic data in the network level;

c) comparing the characteristic traffic data with a predetermined characteristic traffic data profile resulting from statistical computations and representing normal traffic, and determining whether there is abnormal traffic in the network;

d) updating the predetermined characteristic traffic data profile using the characteristic traffic data if there is no abnormal traffic in the network, and analyzing a volume amount of the abnormal traffic and monitoring the abnormal traffic if there is abnormal traffic in the network; and

e) transmitting the analysis result of the ~~seriousness~~ volume amount of the abnormal traffic to an abnormal traffic processing system to detect abnormal traffic without operation of a network manager, and processing the abnormal traffic to prevent a network failure.